

Table 1 - Retrofit References For Steam Turbines

	Plant	# units	Fossil or Nuclear	Country Name	Output (MW)	Speed (rpm)	Turbine OEM	Replacements Components	Details	Order Year of Retrofit	Blading Technology
92	Weisweiler G	1	Fossil	Germany	600	3000	ABB-DEKWE	HP, LP	HP-Inner Block (Inner Casing Solution), LP-Inner Block (Inner Casing Solution)	1992	Reaction
93	Polaniec 4	1	Fossil	Poland	135	3000	ABB-PLZAM	HP, LP	HP-Impulse Wheel, LP-Inner Block (Blade Carrier Solution)	1992	Reaction
94	Boxberg N (13)	1	Fossil	Germany	550	3000	LMZ	LP	LP-Inner Block (Blade Carrier Solution)	1992	Reaction
95	Boxberg P (14)	1	Fossil	Germany	550	3000	LMZ	LP	LP-Inner Block (Blade Carrier Solution)	1992	Reaction
96	Turow 9	1	Fossil	Poland	210	3000	LMZ	LP	LP-Inner Block (Blade Carrier Solution)	1992	Reaction
97	Eggborough	3	Fossil	United Kingdom	500	3000	AEI	LP	Full retrofit of LP cylinders	1992	Impulse
98	West Burton	3	Fossil	United Kingdom	500	3000	EE	LP	Full retrofit of LP cylinders	1992	Impulse
99	Fiddlers Ferry	1	Fossil	United Kingdom	500	3000	EE	LP	Full retrofit of LP cylinders	1992	Impulse
100	Janschwalde A-F	6	Fossil	Germany	500	3000	LMZ	HP, LP	Modernisation of HP and LP turbines	1992	Impulse
101	Tihange 1	1	Nuclear	Belgium	510	1500	Alsthom	LP	Full retrofit of LP cylinders	1993	Impulse
102	Tihange 2	1	Nuclear	Belgium	1000	1500	Alsthom	LP	Full retrofit of LP cylinders	1993	Impulse
103	Doel 3	1	Nuclear	Belgium	1000	1500	Alsthom	LP	Full retrofit of LP cylinders	1993	Impulse
104	Beznau II/22	1	Fossil	Switzerland	182	3000	ABB-CHKRA	HP	HP-Complete Turbine	1993	Reaction
105	Beznau I/11	1	Fossil	Switzerland	182	3000	ABB-CHKRA	HP	HP-Complete Turbine	1993	Reaction
106	Neurath E	1	Fossil	Germany	618	3000	ABB-DEKWE	HP, LP	HP-Inner Block (Inner Casing Solution), LP-Inner Block (Blade Carrier Solution)	1993	Reaction
107	Weisweiler H	1	Fossil	Germany	600	3000	ABB-DEKWE	HP, LP	HP-Inner Block (Inner Casing Solution), LP-Inner Block (Inner Casing Solution)	1993	Reaction
108	Weisweiler F	1	Fossil	Germany	315	3000	ABB-DEKWE	HP, LP	HP-Inner Block (Inner Casing Solution), LP-Inner Block (Inner Casing Solution)	1993	Reaction
109	Polaniec 7	1	Fossil	Poland	235	3000	ABB-PLZAM	HP	HP-Impulse Wheel, LP-Inner Block (Blade Carrier Solution)	1993	Reaction
110	Polaniec 8	1	Fossil	Poland	235	3000	ABB-PLZAM	HP, LP	HP-Impulse Wheel, LP-Inner Block (Blade Carrier Solution)	1993	Reaction
111	Polaniec 2	1	Fossil	Poland	235	3000	ABB-PLZAM	HP, LP	HP-Impulse Wheel, LP-Inner Block (Blade Carrier Solution)	1993	Reaction
112	Dolina Odra 6	1	Fossil	Poland	223	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1993	Reaction
113	Dolina Odra 5	1	Fossil	Poland	223	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1993	Reaction
114	Polaniec 3	1	Fossil	Poland	235	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1993	Reaction
115	Polaniec 1	1	Fossil	Poland	235	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1993	Reaction
116	Polaniec 5	1	Fossil	Poland	235	3000	ABB-PLZAM	HP, LP	HP-Impulse Wheel, LP-Inner Block (Blade Carrier Solution)	1993	Reaction
117	Polaniec 6	1	Fossil	Poland	235	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1993	Reaction
118	Wyifa (4)	4	Nuclear	United Kingdom	288	3000	EE	LP	Retrofit of L-0 and L-1 LP diaphragms	1993	Impulse
119	Hwange (4)	4	Fossil	Zimbabwe	120	3000	MAN	LP	Retrofit of LP inner casings, diaphragms and glands	1993	Impulse
120	Wyifa	4	Nuclear	United Kingdom	288	3000	EE	HP	HP rotor and diaphragm retrofit	1993	Impulse
121	Leibstadt	1	Nuclear	Switzerland	1014	3000	ABB-CHKRA	HP	HP-Inner Block (Inner Casing Solution)	1994	Reaction
122	Neurath A	1	Fossil	Germany	309	3000	ABB-DEKWE	HP, LP	HP-Inner Block (Inner Casing Solution), LP-Inner Block (Blade Carrier Solution)	1994	Reaction
123	TVO 2 (Olkiluoto II)	1	Nuclear	Finland	735	3000	ABB-SESTA	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
124	Laziska 6	1	Fossil	Poland	210	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
125	Laziska 3	1	Fossil	Poland	210	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
126	Laziska 5	1	Fossil	Poland	210	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
127	Laziska 1	1	Fossil	Poland	118	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
128	Turow 08	1	Fossil	Poland	210	3000	ABB-PLZAM	HP	HP-Impulse Wheel, LP-Inner Block (Blade Carrier Solution)	1994	Reaction
129	Kozienice 08	1	Fossil	Poland	225	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
130	Turow 10	1	Fossil	Poland	210	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
131	Laziska 2	1	Fossil	Poland	118	3000	ABB-PLZAM	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
132	Lagisza 2	1	Fossil	Poland	120	3000	ABB-PLZAM	LP	LP-Inner Block (Inner Casing Solution)	1994	Reaction
133	Opole 4	1	Fossil	Poland	370	3000	ABB-PLZAM	LP	LP-Inner Block (Inner Casing Solution)	1994	Reaction
134	Cottam	1	Fossil	United Kingdom	500	3000	EE	LP	Full retrofit of LP cylinders	1994	Impulse
135	Sizewell 'A'	1	Nuclear	United Kingdom	325	3000	EE	HP	HP rotor and diaphragm retrofit	1994	Impulse
136	Big Bend (FL) 2	1	Fossil	United States of America	460	3600	Westinghouse	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction
137	Big Bend (FL) 1	1	Fossil	United States of America	460	3600	Westinghouse	LP	LP-Inner Block (Blade Carrier Solution)	1994	Reaction